



UNIVERSITY OF EDUCATION, WINNEBA
DEPARTMENT OF HEALTH, PHYSICAL EDUCATION, RECREATION AND SPORTS

COURSE CODE : PES 241
COURSE TITLE : EXERCISE PHYSIOLOGY
NO. OF CREDITS : TWO (2)
LECTURER : DR. (MRS.) B. A. ADENIJI
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RATIONALE AND DESCRIPTION

This course is with human response and adaptation to muscular activity. It will examine the physiology related effects of sports activities on the body's system, including fatigue, strength, flexibility, physiological responses of the body before, during and after training (i.e. physiological effects of training).

Emphasis is given to the cardiovascular basis of such phenomena, interrelated topics such as circulatory, respiratory, energy production, aids and impediments to athletic performance.

COURSE OBJECTIVES

At the end of the course, the students are to be able to:

1. Explain the meaning of exercise, physiological and exercise physiology,
2. Discuss the scope of exercise physiology,
3. Give reason why they need to study exercise physiology,
4. Explain the term training and state the different types of training,
5. State the relationship of science and sports science,
6. Explain the physiological effects of training, (Biochemical changes, cardiorespiratory changes and other training effects),
7. State the meaning and types of energy,
8. Explain the sources of energy for physical activities.

STRATEGIES

Lectures, discussions, and class activities to be used to achieve the stated objectives.

EXAMINATIONS

Students will be assessed periodically in the course of the semester. Students will be informed before hand if there is going to be assessment test. There will be an end of semester examination in addition to the continuous assessment. Students who fail to do their assignments or show up for continuous assessment examinations will not be allowed to make up except on medical grounds with a medical report from a recognized physician.

ATTENDANCE

Attendance will be checked at the end of each lecture session. Students are expected to attend all lecture sessions. Students will be allowed only two absences during the semester. Subsequent absences shall attract a point deduction from total points made in course work.

TARDINESS

Lateness to lectures will not be tolerated. Students who come late twice for lectures will be counted as being absent.

EVALUATION PROCEDURES

Continuous Assessment (quizzes, assignment, etc)	=	40%
End of Semester Examination	=	60%

ACADEMIC DISHONESTY

Academic dishonesty will not be allowed. Any form of academic misconduct (cheating, etc) will not be tolerated. All cases of confirmed or suspected dishonesty will be referred to the Departmental Academic Board and eventually to the University Academic Board.

GRADING

A = 89 - 100	B+ = 75 - 79	B = 70 - 74	C+ = 65 - 69
C = 60 - 64	D+ = 55 - 59	D = 50 - 54	E = 49 and below

TOPICAL OUTLINE

1. The concept and scope of exercise physiology.
 - Meaning of exercise, physiology and exercise physiology.
 - The scope of exercise physiology.
 - Importance / why of exercise physiology.
2. Science and sports performance
 - What is science?
 - What is sport science?
 - Neuromuscular concepts of performance.
 - Nervous system.
 - Muscular contraction (types, etc)
3. Respiratory factors and exercise
 - Mechanism of respiration.
 - Lung volumes and lung capacities.
4. Respiratory phenomena
 - Oxygen debt.
 - Second wind.
 - Stitch in the side.
 - Hypo-ventilation.
 - Hyper-ventilation.
 - Breath holding.
5. Circulatory factors and exercise

- Circulatory system and exercise
- Cardiac output, stroke volume, heart rate
- Factors that affect heart rate
- 6. Physiological effects of training
 - What is training? Types of training, muscle fiber types
 - Principles of Training
 - Training phases
 - Training methods / conditioning
- 7. Test / Assessment spirit & Endurance
- 8. Effects of Sports and Endurance training on skeletal muscles.
 - Major cardiorespiratory effects of training.
- 9. Other training effects
 - Training and changes in body composition.
 - Effects of training on the heart rate.
- 10. Biological energy cycle, sources of energy
 - Meaning and types of energy.
 - Sources of energy for physical activities.
 - Aerobic and Anaerobic metabolism.
- 11. Sources of energy for muscle contraction
 - ATP-CP System
- 12. Combination of food (Crebs cycle & ETS)
- 13. Environment and exercise
- 14. Aids to performance
- 15. Test / Revision
- 16. Examination

REFERENCES

Black, P., Cruick Shank, W. & Ledinghan, D. (1993) Physical Education in action. China: Thomas Nelson & Sons Ltd.

deVries, H. A. and Housh, J. J. (1994) Physiology of Exercise for Physical Education, Athletics and Exercise Science. 5th edition. New York: WCB / McGraw-Hill.

Lamb, d. (1984) Physiology of Exercise (Responses and Adaptations) 2nd ed. New York: Macmillan Publishing Company.

Watson, A.W.S. (1983) Physical Fitness and Athletic Performance. A guide for students, Athletes and Coaches. New York: Longman Inc.